CSIS – Sandia Global Water Futures Project

Summary of Conferences

July 28, 2004

We have reached a significant paradigm shift in history. We are moving from a world rich and abundant in water resources to a world of water stress and scarcity. The solutions to address the challenges ahead do not lie in the physical world, rather are innately human. They will be measured by our capacity to balance supply and demand between satisfying basic human needs and rights, fostering economic development, and sustaining environmental integrity. They will involve stakeholders from many different sectors and many different levels of authority. They will require adequate, reliable, informed governance structures.

The CSIS-Sandia Global Water Futures project seeks to inform and mobilize policymakers, key decisionmakers, and stakeholders toward well-integrated solutions for global water issues. We will explore the multiple dimensions of these solutions through two one-and-a-half day conferences, the first focusing on the interface between technology and governance and the second exploring the various layers of institutional capacity. Each conference will begin with a general survey of problems in supply and demand management in order to create a common frame of reference and boundaries for discussion. We will then identify the tools available and methods for implementation in both the technological and institutional context.

Session One: Governance and Technology

Unmanaged, the Earth's natural systems could provide food for just 600 million people[1]. That is only one tenth of our current population. Technology has been at the core of staving off the dire predictions of mass starvation and global thirst made in the mid-1970s by increasing the area of irrigated land, increasing crop intensities, and increasing yield growth. Beyond agricultural gains, technological innovations in water supply and sanitation have improved living standards for millions of people across the planet. Simply creating more or better technologies is not enough to solve the world's water issues, however. The human and institutional component of technological innovation and diffusion will be critical in mobilizing technology to meet future needs.

Session one will be devoted to technological methods and the relevant institutional requirements for implementing solutions to water supply and demand issues. We will begin with a survey of current and developing water technologies and their uses. Following this discussion, we will develop a matrix to understand how, when, and why institutions develop, utilize, and maintain specific technologies in managing water supply and demand. Potential variables include

[1] Food and Agriculture Organization, *Agriculture, Food and Water*, 2003.

level of authority, private sector involvement, non-governmental organization involvement, financial resources, levels of education, economic status, etc. We will also consider the sensitivities of these variables against time as current water usage and population trends develop.

Session Two: Governance and Capacity

Technology is not the only source or avenue of human innovation. Moreover, many global water issues go beyond straight physical supply and demand problems. Management of these two opposing forces also involves human capacities to negotiate the interactions between physical infrastructure, economic considerations, and political pressures. Session two will focus on the management of and innovations in institutional and governance capacities.

We will begin session two with a review of current governance structures across the world. Following this survey, we will explore institutional capacities for (1) mediating disputes and (2) mediating demand. The former discussion will include disputes and opportunities for cooperation between levels of governance, the private and public sector, and transboundary actors. The latter will explore institutional capacities for allocating water resources between sectors, mobilizing financial resources, and addressing economic concerns related to water pricing. Social and cultural factors must be considered in all of these issues as well as changing requirements across time.